

## Transparencies

5. Verisimilitude
- 1a. Atomic Structure
2. Probability Distribution of the Electron in a Hydrogen Atom
3. Notion from A to B.  
Particle Description  
Field Description
4. Annihilation, Creation and the Vacuum

1. UCL study of physics - frontier piece  
 QT & Relativity disappointed - Black box approach  
 to QM - fastly physics of people in a  
 hurry / physics for pedestrians
2. Precision among philosophers, start again from  
 scratch, learn language of physics + my  
 physics
3. Phil. of physics recognized discipline  
 second-order activity reflecting on nature of  
 physics - ex. neurologist  
 concerned with underlying principles, concepts  
 and ultimate presuppositions of ~~the~~ physics
4. Modern physics raises several phil. problems
  - (1) appearance of theory - Ad hoc etc
  - (2) heuristics, metacriteria of quality  
 models, theories etc
  - (3) ethical & aesthetic questions
  - (4) Social organization
  - (5) Metaphysical questions - ultimate nature of reality
5. General phil. of science  
 Science cannot with its nature of the external world  
 not even words of thoughts, dream, hopes  
 - objective reality v. subjective experience of  
 reality
6. presuppositions - (1) physical entities  
 (2) know through sense experience  
 (3) exist independently of perception  
 (4) Cause these impressions



fact, most & experience

In fact (1) rationalism  
(2) empiricism.

8. But empiricism  $\rightarrow$  scepticism.

$\rightarrow$  pull in direction of <sup>idealism</sup> intuitionism, phenomenism, sensualism.

9. ~~Cogitatio~~ rationalism - is it credible?

10. Cogitatio rationalism

11. Science does not give us certain  
conjectures controlled by experiment.

12. This is mess of Potter

13. demarcation criterion

14. Eddis anecdote

15. empirical basis - methodological decisions

16. Backet v. searchlight - stories lead to problems  
 $\rightarrow$  new theories

17. Verisimilitude

18. Miller example  $P > D$  or  $P \geq D$

19. Popper letter In pure science the  $H$  applied science  
Eas. Theory will run from  $H$  to  $C$  knowledge from  $C$   
break throughs

2. <sup>relativistic</sup> of special relativity or  
quest for the truth

21. Nature of reality, defn of metaphysics
22. QM example
23. New sense of interpolation
24. Ex Existence of tables
- 25.1 Ex Atomism  
History
26. Kinetic theory — pragmatic atomism  
→ metaphysical atomism
27. Atomic structure
28. heuristic guide of metaphysical atomism
29. Nature of electron
30. q.m. — wave-particle duality
31. electron spread as a wave
32. numericality of an electron as a particle
33. creation / annihilation  $\rightarrow \alpha F^\dagger$
34. Motion from A-B — particle duality



36. creation } apprehension  
— Retohaleum
37. Underdetermination  
but evaluation in terms of R-sentences
38. Puzzle about QM  
To be spread self-interest  
Schrödinger's cat  
realist interpretation, must-independent  
reality, but holistic involvement of  
components' parts of a composite system
39. Interaction of Physics & Philosophy.  
Evolution: Metaphysics drives Physics  
Normal sense: Physics justifies Metaphysics  
— Experimental metaphysics
40. Aspect experiment  
— new immediate sense of experimental  
metaphysics
41. Parametric interaction  
QM will be found different
42. Concluding remarks, Bell example